

ABSTRACT

A method of redirecting light using an actuatable two-layer diffraction grating structure, the method having applications in wavelength-division multiplexed systems. An optical add/drop modulator (OADM) including an actuatable diffraction grating, for use with a wavelength-division multiplexed signal. An OADM having an optical source located off the main pathway to direct a optical carrier to be added onto the actuatable diffraction grating such that the carrier is diffracted into the main pathway. A detector to measure signal strength for use with an optical processor, the optical processor having an actuatable structure having gaps between the actuated portion of the structure. The detector detecting the portions of light diffracted by the gaps.